



Global Organic Textile Standard (GOTS) Position on GM Contamination in Textiles made from Organic Cotton Fibres

The Global Organic Textile Standard (GOTS) is a processing standard, which mandates using minimum 70% certified organic fibre, such as organic cotton. Organic Cotton fibre, which is used as a starting material for production of textiles, is not certified by GOTS. GOTS accepts natural fibres that are certified 'organic' or 'organic - in conversion' according to Regulation (EC) 834/2007, USDA National Organic Program (NOP), or any (other) standard approved in the IFOAM Family of Standards for the relevant scope of production (crop or animal production). The requirement to get certified to GOTS standard commences from the cotton gin.

Organic Cotton & Genetic Modification

While some countries have forbidden the cultivation of GM cotton (such as Turkey) there are others where GM Cotton cultivation has made substantial inroads.

Organic Cotton is not expected to contain any genetically modified content. The EU regulation 834/2007 states that Genetically modified organisms (GMOs) and products produced from or by GMOs are incompatible with the concept of organic production and consumers' perception of organic products. However, existing labelling thresholds for organic food products have a ceiling of 0.9% presence of GMO, which represents the adventitious and technically unavoidable presence of GMOs in organic products.

Despite these facts, recently there have been few cases where different parties have tested certified organic textile products (including those certified to GOTS) and have reported presence of GM contamination at unexpected levels in these products.

This causes anxiety within the organic community from certifiers, producers, brands, retailers and consumers. The very concept of organic is thence questioned by consumers who are committed to incorporate a sustainable, environmentally friendly and clean lifestyle that they have chosen to follow.

Guidance to Certifiers by GOTS

GOTS certification is done through independent third party certification bodies, approved by GOTS. Certifiers must ensure that the incoming raw cotton in a GOTS certified gin is certified organic.

To counter the different risk on the different stages of the supply chain GOTS prescribes a comprehensive risk assessment, every certified operation from ginning to trading has to have in place. The risk assessment is checked by the certifier as part of the annual onsite audit. The most important risks are explicitly mentioned in the standard, so is GMO (see [GOTS 5.0](#), para 4.1 and 4.2 and respective interpretation in the [GOTS Implementation Manual V 5.0](#), see box below)

Certifiers implement testing for GM presence in a GOTS certified gin based on their own risk assessment.



Factors that should be considered – if applicable – in an appropriate risk assessment analysis:

- Kind of organic fibres used : pesticides and potential GM varieties commonly used if the same type of fibre would have been sourced conventional.

- Kind of additional conventional fibres, accessories and inputs used : pesticides and potential GM varieties commonly used for the corresponding crop; prohibited additives commonly used for regenerated and synthetic fibres as well as accessories.

GM testing on (cotton) fibre material is more appropriate/reliable at an early stage of the processing chain as still sufficient DNA from the plant can be found in the fibre material (e.g. at ginning or spinning stage). The more fibres are processed the more difficult it becomes to detect remaining DNA from the plant and to get solid and repeatable quantified results as prerequisite for a root cause analysis if fibres from GM crops have been (intentionally) used/added or if contamination is based on the adventitious and technically unavoidable presence of GMO traces (due to the coexistence of GM and non-GM / organic crops in many production areas). The following relevant tests are offered by specified labs:

- Qualitative screening: This analysis detects known GM sequences in the DNA, especially the 'CaMV 35S-Promotor' and 'Nos-Terminator'. However, the qualitative screening does not determine what kind of crop the detected GM-DNA is derived from. Not only cotton but also other GM-modified crops such as maize, potato (both relevant for starch sizing) or soya can contain these sequences.
- Event-specific identification: Can be assigned subsequently to determine crop and the precise variety (selected based on the growing area, if known, e.g. Bollgard™ (1776, 757, MON 531) and Bollgard II™ (MON15985) as samples of common GM cotton varieties grown in India).
- Direct quantification: This subsequent method will give (more or less) exact quantitative data on the total portion of GM material detected.

Testing for GM Cotton

GOTS is aware that based on the risk assessment profile that they have ascertained, certifiers do test certified organic raw cotton for GM presence and proceed with further certification if the test results are negative. These tests are performed at suitable laboratories close to cotton producing regions / gins so as to save time and money in testing. Few claims have been made by buyers in Buying Countries that GM presence was detected in processed textile goods when tested at laboratories in their locations.

Some experts in the field state that in the absence of other plant material, testing cellulosic matter (cotton fibre) for GM is not just difficult; it may produce inappropriate and unreliable test results. They inform us that this is further exacerbated when tests are carried out on processed cotton (yarn – fabric – consumer product). However, there are other test laboratories who confirm that they can extract DNA from cellulose and successfully perform reliable & repeatable tests on consumer goods. Other experts state that given the sampling restrictions in a processed textile product, quantitative results are almost impossible even if a qualitative assessment is theoretically possible.

It is a fact that at this time, internationally recognised standard test methods do not exist for detection of genetic modification of cotton fibre. GOTS is aware that laboratories currently performing tests are using internally developed test methods.



This could mean a few things – test protocols being used by the laboratories are not equivalent or there are false positives or false negatives being shown up. We could not find scientific consensus on test methods at this time.

Round Robin Tests conducted by GOTS

GOTS organised a Round Robin test on lint cotton in June-July 2016 to determine the reliability, accuracy and repeatability of tests carried out by selected laboratories from Europe and South Asia. Each laboratory received six specimen samples were prepared from two cotton lint materials, one of which was GM cotton. Collated test results indicated that only 2 of 8 laboratories identified GM samples as expected while none of them could quantify GM matter accurately. This lead GOTS to conclude that current testing was unreliable as it is carried out but to conclusively establish if testing on cellulosic material can be recommended, a much larger study would be needed.

Next Steps by GOTS

GOTS proposes to commission an expanded testing study with the help of external funding where a substantially larger number of samples are tested at seed / lint stages to determine if testing results can be considered reliable and if quantification is indeed possible for cellulosic material. A project has been formulated and is currently under consideration for required funding.

GOTS also suggests that a formalised test method needs to be developed for testing GM matter in cotton fibre, yarn, fabric so that such a method be made widely available for adoption and use by suitably qualified laboratories and the industry. GOTS has taken steps that a process leading to a EN/ISO norm will commence

GOTS is having detailed discussions with like-minded organisations, such as Textile Exchange (www.textileexchange.org) to develop a common strategy to address possible GM contamination in the organic cotton chain.

GOTS is actively engaged with several brands and retailers to address this issue in a positive manner so that the industry and consumers are both appropriately informed of the products they purchase and are also safeguarded from claims that cannot be verified.

As the world's leading standard for processing of organic fibres, GOTS is committed to ensure credibility of organic claims at every processing step. GOTS is a dynamic standard and shall keep responding to new challenges by engaging with responsible stakeholders and scientific community.

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